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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/087,706	02/28/2002	Yuqun Zeng	12113/46002	7984
26646	7590	10/16/2007	EXAMINER	
KENYON & KENYON LLP			PATEL, ISHWARBHAI B	
ONE BROADWAY			ART UNIT	PAPER NUMBER
NEW YORK, NY 10004			2841	
			NOTIFICATION DATE	DELIVERY MODE
			10/16/2007	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

uspto@kenyon.com

Office Action Summary	Application No.	Applicant(s)	
	10/087,706	ZENG, YUQUN	
	Examiner	Art Unit	
	Ishwar (I. B.) Patel	2841	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 03 August 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-4 and 6-14 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4 and 6-14 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 10 March 2005 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. This action is in reply to the RESPONSE filed on August 3, 2007.

Response to Arguments

2. Applicant's arguments filed on August 3, 2007 have been fully considered but they are not persuasive.

Regarding claim rejection under 35 USC 112, 1st and 2nd paragraph:

Applicant, starting on page 4 of the response argues that those skilled in the art understand that the phrase "copper trace" refers to copper lines in a circuit that allow electricity to flow between electronic components. Similarly, those skilled in the art understand that "connecting cables", as used in the context of the specification and claims, refer to copper traces. Accordingly, it is respectfully submitted that claim 1, as well as dependent claims 2 to 4 and 6 to 14, comply with the written description requirement under 35 U.S.C. § 112, 1st and 2nd paragraph.

This not found to be persuasive.

The claim language must be clear and concise. Applicants can use their own terminology but are required to make clear and precise the terms that are used to define the invention whereby the meets and bounds of the claimed invention can be ascertained. Further, the terminology should be used consistently in the claims. The argument that those skilled in the art understand that "connecting cables", as used in the context of the specification and claims, refer to copper traces, is not sufficient to overcome the 35 USC 112 rejection set forth in previous action. For the sake of

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argument, even if the ordinary skill in the art were to equate “cables” with “traces” the claim would lack proper antecedent basis for “all connecting cables” since the claim only recites one “copper trace”.

Therefore, The 35 USC 112 rejection is proper and maintained.

Regarding claim rejection under 102(b) / 103 (a) with the prior art of Unruh (US Patent No. 5,350,594):

Regarding the rejection with the prior art of Unruh, the applicant argues that Unruh does not disclose copper traces as recited in claim 1 and states that ground plane contact 32 does not describe copper trace. Applicant further argues that the copper trace connects component and allows electricity to flow and it is not equivalent to a ground plane contact 32.

This not found to be correct.

Unruh, though not explicitly disclose the traces, discloses a circuit board the component (12) mounted on the board (10) which are connected to the contact pad (column 4, line 15-17) and further discloses the board (10) made of copper clad laminate (column 4, line 20-22) with leads or traces (column 4, line 38-40). Therefore, Unruh meets the limitation of “copper traces.”

Regarding claim rejection under 102(103 (a) with the prior art of Kawakami, Dodsworth and Anderson):

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Regarding the rejection with the prior art of Kawakami, Dodsworth and Anderson, the applicant argues that the Dodsworth reference does not describe or discloses the feature wherein said dissipative coating layer is applied onto all connecting cable of ESD sensitive devices. The leads are not equivalent to copper traces / connecting cables.

This is not found to be correct.

Figure 2 of the Dodsworth, as applied to claim rejection, is a section taken at A-A in figure 1. Figure 1 shows flexible circuit board (100) with traces formed on substrate (50). Further, Dodsworth states that the dissipating layer (150) is applied to reduce the trace-to-trace resistance (column 4, line 37-40). Therefore, Dodsworth discloses traces / connecting cables and meets the requirement.

Further, Regarding the prior art of Anderson, the applicant argues that the Anderson reference refers to a variably conductive material 180 which provides good electrical contact between the material 180, the pads 172, and/or the conductors 143, Column 7, lines 6-11. Therefore, the material 180 may not be a dissipative coating layer, as asserted by the Office Action, as it would merely conduct electricity to the pads 172 and/or the conductors 143.

This is not found to be correct.

Anderson discloses a shunt structure in figure 3 with layer (180) as dissipative layer with variable conductive properties. Anderson discloses the property of the shunt material as conductive at a higher voltage (column 6, line 25-37). Therefore, the layer (180) is dissipative layer.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

4. Claims 1-4 and 6-14 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter, which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. While figure 2 shows the cross section of the wireless type of component and figure 3 shows top view of the component, no relevant detail of the dissipative coating layer applied onto all connecting cables of ESD sensitive devices, as claimed in the base claim 1, is either described in the specification or shown in the figure. It is unclear for a person of ordinary skill in the art to understand the structure of the dissipative coating layer applied onto all connecting cables of ESD devices.

5. Claims 1-4 and 6-14 rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter, which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. While figure 2 shows the cross section of the wireless type of component and figure 3 shows top view of the component, no relevant detail of the dissipative coating

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layer applied onto all connecting cable of ESD sensitive devices, as claimed in the base claim 1, is either described in the specification or shown in the figure. It is unclear for a person of ordinary skill in the art the detail structure of the dissipative coating layer applied onto all connecting cables of ESD devices.

6. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter, which the applicant regards as his invention.

7. Claims 1-4 and 6-14 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. While the applicant has claimed "wherein said the dissipative coating layer applied onto all connecting cable of ESD sensitive devices" no relevant detail is either described in the description or the figure. It is unclear for a person of ordinary skill in the art to understand the claimed connection structure with the dissipative coating layer. This makes the scope indefinite.

For the examination purpose, the examiner, as one of ordinary skill in the art would have assumed (and as stated by the applicant in the response argument) assumes the "connecting cable" as the traces or leads connecting various components.

Drawings

8. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the detail of dissipative coating layer applied onto all connecting cables of ESD sensitive devices, as claimed in

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the base claim 1, must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 102

9. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

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10. Claims 1-4 and 6-9 are rejected under 35 U.S.C. 102(b) as being anticipated by Unruh (US Patent No. 5,350,594).

Regarding claim 1, Unruh in figure 2 discloses an electrostatic discharge device (ESD) safe wireless type of component comprising: a base (10), an electrically conductive copper trace (traces and pad on board 10 made of copper clad laminate, not shown in figure except pad 32, column 4, line 5-40) provided on said base (10), and an insulating layer (30) coated on said copper trace (see figure); wherein a dissipative coating layer (34) is applied on the top of said insulation layer (30), wherein said dissipative coating layer is applied onto all connecting leads / traces of ESD sensitive devices (connecting leads of the components including the ESD sensitive devices 12, traces/leads not shown).

Regarding claim 2, Unruh further discloses the surface resistivity of said dissipative coating layer ranges about $10^6 - 10^9 \Omega / \square$ (column 4, line 26-27, which is within the range recited, $10^4 - 10^{11} \Omega$).

Regarding claim 3, Unruh further discloses a thickness of dissipative coating in the range between 5-100 μm (1.5 mil, about 38 μm , column 5, line 65, which is within the claimed range of 5-100 μm).

Regarding claim 4, Unruh further discloses exposed bonding pad area (32 and other bonding pad are exposed, column 4, line 13 - 35).

Regarding claims 6 and 7, Unruh discloses all the features of the claimed invention, but does not explicitly disclose the dissipative coating layer is applied via lamination, as claimed in claim 6 or the dissipative coating layer is applied via sputtering, as claimed in claim 7. However, how the dissipative layer is applied is a process limitation in a product claim. Such a process limitation defines the claimed invention over the prior art only to the degree that it defines the product itself. A process limitation cannot serve to patentably distinguish the product over the prior art, in the case that the product is same as, or obvious over, the prior art. See Product-by-Process in MPEP 2113 and 2173.05(p) and *In re Thorpe*, 227 USPQ 964, 966 (Fed. Cir. 1985). Unruh discloses the structure. Therefore, Unruh meets the limitations of claim 6 and 7.

Regarding claim 8, Unruh further discloses the dissipative coating layer includes polymer (column 5, line 60-65).

Regarding claim 9, Unruh further discloses the said wireless type of components is configured to reduce a static charge from 1000 V to below 10 V (as pad 32 is connected to ground, it will reduce the voltage below 10 V depending upon the ground potential, which may be close to zero).

Claim Rejections - 35 USC § 103

11. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

12. Claims 10-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Unruh as applied to claim 1 above, and further in view of Dodsworth (US Patent No. 6,459,043) and Anderson (US Patent No. 6,687,097).

Regarding claims 10-14, Unruh discloses all the features of the claimed invention as applied to claim 1 above, but does not disclose the ESD sensitive devices include a component of a disk drive, as claimed in claim 10, or a magnetic data storage, as claimed in claim 11, or a slider, as claimed in claim 12, or a pre-amp, as claimed in claim 13 or a micro-actuator, as claimed in claim 14. However, all the components as claimed are known in the art and it would have been obvious to a person of ordinary skill in the art at the time of applicant's invention to provide the known ESD protection device to protect those devices against electrostatic charge. As an example, Dodsworth (US Patent No. 6,459,043) in figure 2 discloses a flexible circuit with electrostatic damage limiting feature having all the leads (110, connecting various component) coated with polymeric material (150) to act as a electrostatic discharge dissipating layer to protect magneto resistive (MR) of a hard disk drive and further recites the resistance value in the range of $10^4 - 10^9 \Omega$ (column 4, line 34-52). Anderson (US Patent No. 6,687,097) in figure 3A discloses an electrostatic protection for magnetic heads with

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pads and conductor (172/143, which are connecting various component) coated with a polymer-coating layer (180) acting as an electrostatic charge dissipating layer.

Therefore, it would have been obvious to a person of ordinary skill in the art at the time of applicant's invention to use the electrostatic discharge protection feature of Unruh to include a component of a disk drive, as claimed in claim 10, or a magnetic data storage, as claimed in claim 11, or a slider, as claimed in claim 12, or a pre-amp, as claimed in claim 13 or a micro-actuator, as claimed in claim 14, as taught by Dodsworth, and Anderson in order to protect the devices from damage due to electrostatic charge.

13. Claim 1, 4, 6, 7, and 9-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kawakami, Japanese Patent Publication No. 02-174289 in view of Dodsworth (US Patent No. 6,459,043) and Anderson (US Patent No. 6,687,097).

Regarding claim 1, Kawakami et al., discloses an electrostatic discharge device (ESD) safe wireless type of component comprising: a base (1), an electrically

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conductive copper trace (2, see figure) provided on said base (1), and an insulating layer (4) coated on copper trace (2); wherein a dissipative coating layer (5) is applied on the top of said insulation layer (4).

Kawakami et al., does not explicitly disclose any cable connected to the board connecting other devices and dissipative coating layer applied onto all connecting leads / traces of ESD sensitive devices.

Dodsworth (US Patent No. 6,459,043) in figure 2 discloses a flexible circuit with electrostatic damage limiting feature having all the leads (110, connecting various component) coated with polymeric material (150) to act as a electrostatic discharge dissipating layer to protect magneto resistive (MR) of a hard disk drive and further recites the resistance value in the range of $10^4 - 10^9 \Omega$ (column 4, line 34-52).

Anderson (US Patent No. 6,687,097) in figure 3A discloses an electrostatic protection for magnetic heads with pads and conductor (172/143, which are connecting various component) coated with a polymer coating layer (180) acting as an electrostatic charge dissipating layer.

Therefore, it would have been obvious to a person of ordinary skill in the art at the time of applicant's invention to provide the board of Kawakami with the connecting cables of for input / out put signals of various devices, which are coated with dissipating layer, as taught by Dodsworth and Anderson in order to have the protection against static electricity generated during assembly or operation.

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Regarding claim 4, the modified structure of Kawakami et al., further discloses exposed bonding pad area (3).

Regarding claims 6 and 7, the modified structure of Kawakami et al., discloses all the features of the claimed invention, but does not explicitly disclose the dissipative coating layer is applied via lamination, as claimed in claim 6 or the dissipative coating layer is applied via sputtering, as claimed in claim 7. However, how the dissipative layer is applied is a process limitation in a product claim. Such a process limitation defines the claimed invention over the prior art only to the degree that it defines the product itself. A process limitation cannot serve to patentably distinguish the product over the prior art, in the case that the product is same as, or obvious over, the prior art. See Product-by-Process in MPEP 2113 and 2173.05(p) and *In re Thorpe*, 227 USPQ 964, 966 (Fed. Cir. 1985). The modified board of Kawakami discloses the structure. Therefore, the modified structure of Kawakami meets the limitations of claim 6 and 7.

Regarding claim 9, the modified structure of Kawakami discloses all the features of the claimed invention, but does not disclose the said wireless type of components is configured to reduce a static charge from 1000 V to below 10 V.

As applied to claim 1 above, Dodsworth, in figure 2, discloses a dissipating layer (150) for ESD protection of magneto resistive (MR) head and further recites that the tribocharge voltage can be minimized by connecting the dissipating layer (150) to a ground trace, which may reduced the voltage to even zero, (column 4, line 15-33).

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A person of ordinary skill in the art at the time of applicant's invention would have configured the device to a desired safe voltage value.

Further, it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or working ranges involves only routine skill in the art. *In re Aller*, 220 F.2d 454, 456, 105 USPQ 233, 235 (CCPA 1955).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time of applicant's invention to configure the modified structure of Kawakami to reduce a static charge from 1000 V to below 10 V, as taught by Dodsworth, in order to provide the desired electro static discharge protection to the device.

Regarding claims 10-12, the modified structure of Kawakami further discloses all the features of the claimed invention, including the ESD sensitive devices include a component of a disk drive, as claimed in claim 10, and comprise a magnetic data storage, as recited in claim 11 and a slider as recited in claim 12 (see abstract of Dodsworth and Anderson, Anderson column 1, line 12-30, column 5, line 35-50).

Regarding claims 13 and 14, the modified structure of Kawakami discloses all the features of the claimed invention, but does not disclose the ESD sensitive devices include a component a pre-amp, as claimed in claim 13 or a micro-actuator, as claimed in claim 14. However, both the components as claimed are known in the art and are part of hard disk drive system. It would have been obvious to a person of ordinary skill in the art at the time of applicant's invention to provide the known ESD protection device to

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protect those devices against electrostatic charge as recited by Dodsworth and Anderson. Therefore, it would have been obvious to a person of ordinary skill in the art at the time of applicant's invention to construe the ESD device of the modified structure of Kawakami et al., to include a pre-amp, as recited in claim 13 or a micro-actuator, as recited in claim 14, as taught by Dodsworth and Anderson, in order to protect the devices from damage due to electro static charge.

14. Claim 2, 3 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over the modified structure of Kawakami as applied to claim 1 above, and further in view of Remington, US Patent No. 5,350,228.

Regarding claim 2, the modified structure of Kawakami discloses all the features of the claimed invention as applied to claim 1 above, but does not explicitly disclose the surface resistivity of said dissipative coating layer ranges about 10^4 – $10^{11} \Omega / \square$.

Remington, in figure 2, discloses an electrostatic discharge protective coating (electrostatic dissipative paint) with a thickness of 0.7 to 0.9 mils ($17 \mu\text{m}$ to $22 \mu\text{m}$ column 4, line 65) and surface resistivity of about 10^6 - 10^{10} ohm, (column 4, line 30-40) to have protection against static electricity.

Dodsworth as applied to claim 1 above recites the dissipative coating with resistance value in the range of 10^4 – $10^9 \Omega$.

Further, it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of design choice. *In re Leshin*, 125 USPQ.

Therefore, it would have been obvious to a person of ordinary skill in the art at the time of applicant's invention to provide the dissipative coating of Kawakami et al., with a surface resistivity ranges about $10^4 - 10^{11} \Omega / \square$, as taught by Remington and Dodsworth, in order to have desired protection from the static electricity.

Regarding claim 3, the modified structure of Kawakami further discloses a thickness of dissipative coating in the range between 0.7 mils to 0.9 mils as recited in by Remington ($17 \mu\text{m}$ to $22 \mu\text{m}$) as applied to claim 2 above, which is within the claimed range of 5-100 μm .

Regarding claim 8, the modified structure of Kawakami further discloses the dissipative coating layer include a polymer (as recited by Remington, column 5, line 26-40, Dodsworth, column 3, line 49-52).

Conclusion

15. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Isern-Flecha (US Patent No. 5,557,064) in figure 7 discloses a board (65) with component (63) mounted on the surface having a conformal shield (10) and further recites that the conformal shield (10) can be constructed to provide additional features.

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For example, the shielding material may be chosen to provide electrostatic discharge protection (column 5, line 60-67).

16. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

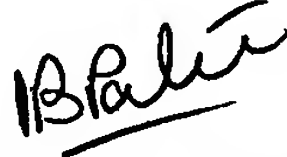
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ishwar (I. B.) Patel whose telephone number is (571) 272 1933. The examiner can normally be reached on M-F (8:30 - 5:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Diego Gutierrez can be reached on (571) 272 2245. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

October 10, 2007


Ishwar (I. B.) Patel
Primary Examiner
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